
Space Weather Forecast

Issued on Friday, 07 June 2024 at 12:19 Local

This forecast provides a four day assessment of space weather events. The probabilities stated below are for reaching or exceeding the given levels. For more information about space weather impacts please see the Met Office Space Weather Scales <https://www.metoffice.gov.uk/weather/learn-about/space-weather/uk-scales>

Space Weather Forecast Headline: Isolated Moderate-class flares remain likely.

Analysis of Space Weather Activity over past 24 hours

Solar Activity: Solar activity has been Moderate during the last 24 hours with two Moderate-class flares, one from the complex region in the southwest and the other from the as yet unnumbered region on the southeastern limb. There are nine visible sunspot regions. The aforementioned complex region in the southwest, remains relatively unchanged but continues to display a complex magnetic structure both within and above the spot. Another in the southwest, has a persistent small delta within its trailer, but has remained largely inactive with a slight decrease in overall size. Both recently numbered spots in the southeast are showing signs of growth and complexification. The aforementioned as yet unnumbered region rotating into view has had a preliminary classification assigned, appearing as a potentially large and complex region, but will be fully assessed in coming days as it rotates fully into the disk. All other regions remain smaller and simple at present.

There were no Earth-directed coronal mass ejections observed in available imagery.

Solar Wind / Geomagnetic Activity: Solar winds have been at background, perhaps with a signal for a late weak transient. Speeds were slow/ambient until 07/1055 UTC when they became slightly elevated. The Interplanetary Magnetic Field (IMF), B_t, was weak for much of the period until 07/1055 UTC when it became moderate. The north-south component varied weakly, becoming increasingly negative (southward) until 07/1055 UTC when it became moderately negative. Geomagnetic activity was Quiet to Unsettled (K_p 0-3).

Energetic Particles / Solar Radiation: The count rate of energetic particles (high energy protons) remained at background levels with no solar radiation storms occurring.

Four-Day Space Weather Forecast Summary

Solar Activity: Occasional Moderate activity is likely with isolated Moderate-class flares and a slight chance of Strong-class flares

Solar Wind / Geomagnetic Activity: There are no Earth-directed coronal mass ejections. The next potential enhancement is likely to be from the arrival of faster solar winds from a weak coronal hole. These could bring slightly elevated or possibly elevated wind speeds later on day 2 or perhaps more likely on day 3 (08-09 Jun) onwards, although this is low confidence. Overall, Quiet geomagnetic activity is expected, increasing to give a spell of Unsettled with Active intervals with any coronal hole fast wind onset.

Energetic Particles / Solar Radiation: The count rate of energetic particles (high energy protons) is likely to persist at background levels, with a slight chance of rising above the S1/Minor Radiation Storm threshold throughout in association with any notable flaring that occurs.

Geomagnetic Storms:

Geo-Magnetic Storm	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC)	Day 2 (00-24 UTC)	Day 3 (00-24 UTC)	Day 4 (00-24 UTC)
Probability (Exceedance)			(%)	(%)	(%)	(%)
Minor or Moderate	G1 to G2	No	1	5	10	5
Strong	G3	No	1	1	1	1
Severe	G4	No	1	1	1	1
Extreme	G5	No	1	1	1	1

Radio Blackouts - X Ray Flares:

X Ray Flares	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC)	Day 2 (00-24 UTC)	Day 3 (00-24 UTC)	Day 4 (00-24 UTC)
Probability			(%)	(%)	(%)	(%)
Active	R1-R2 M Class	Yes	60	60	60	60
Very Active	R3 to R5 X	No	10	10	10	10

Solar Radiation Storms - (High Energy Protons):

Radiation Storms	Level (cm ⁻² sr ⁻¹ s ⁻¹)	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC)	Day 2 (00-24 UTC)	Day 3 (00-24 UTC)	Day 4 (00-24 UTC)
Probability (Exceedance)			(%)	(%)	(%)	(%)
Active	≥ S1	No	10	10	10	10
Very Active	≥ S3 *	No	1	1	1	1

* S3 ≥ 10 MeV ≥ 1000 pfu and / or ≥ 50 MeV ≥ 10 pfu. (pfu = cm⁻²sr⁻¹s⁻¹)